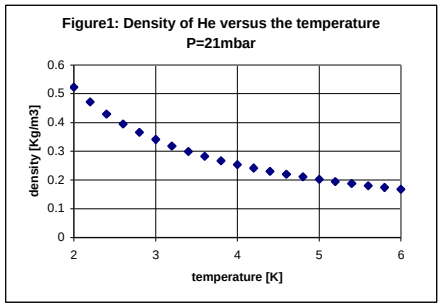
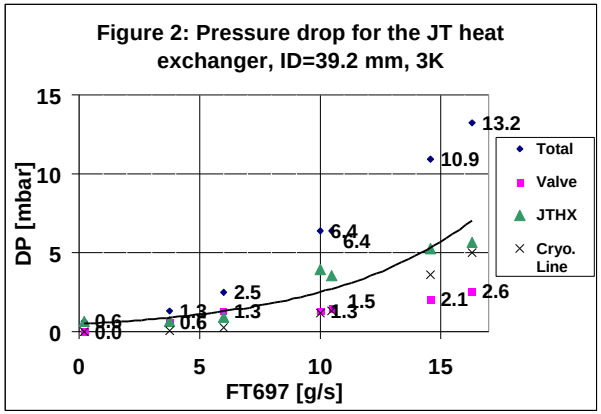
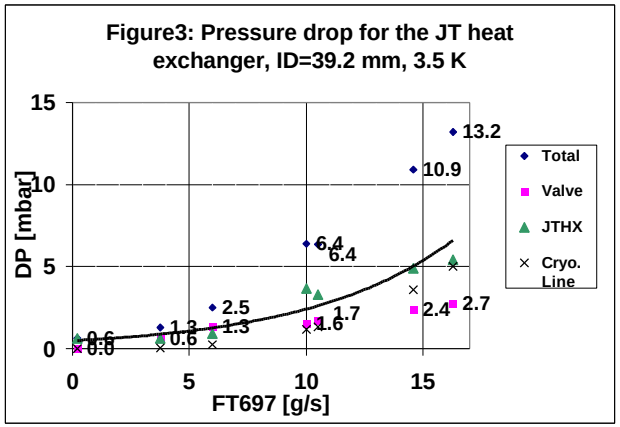
US-IT-HXTU
Pressure drop distribution : JT heat exchanger and cryo. facilities , cd/08/25/00

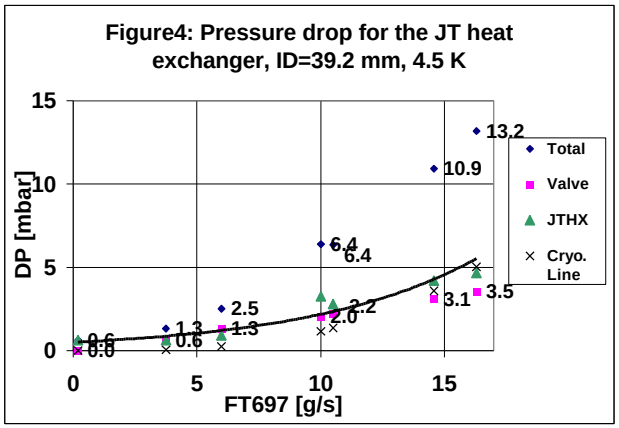
Intro : Influence of the cold helium temperature for the interpretation of the pressure drop. As mentioned in the previous studies hypothesis, DPvalve is calculated with helium density taken with helium temperature at 3K.

Figure 1 : density of He at 21 mbar, versus T
Figure 2 : DP estimation if T=3K
Figure 3 : DP estimation if T=3.5K
Figure 4 : DP estimation if T=4.5K









Conclusion :

Even if we consider a higher temperature for the calculation of the DP_{valve}, the DP_{JTHX} are still of the order of twice the expected DP. But as already stressed,

- First, the DP_{total} is read by the means of separate different gauges, ie error in the P. interpretation must be admitted.
- Furthermore the DP_{line} is extrapolated from an « old » measurement but not checked.
- Last, the additional pressure drop of the each single component of the valve box is considered as negligable in this analysis.

cd-08/23/00